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PATENT COOPERATION TREATY

Translation

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 11276p	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/DE2003/000969	International filing date (day/month/year) 24 March 2003 (24.03.2003)	Priority date (day/month/year) 22 March 2002 (22.03.2002)
International Patent Classification (IPC) or national classification and IPC H04B 10/158		
Applicant MELEXIS GMBH		

<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of <u>2</u> sheets.</p>	
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>	

Date of submission of the demand 25 September 2003 (25.09.2003)	Date of completion of this report 09 June 2004 (09.06.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/DE2003/000969

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
pages _____ 1-7 _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☒ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages _____ 1-15 _____, filed with the letter of _____ 12 May 2004 (12.05.2004)
- ☒ the drawings:
pages _____ 1/3-3/3 _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/DE 03/00969

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	1, 3-5, 7-10, 12-15	YES
	Claims		NO
Inventive step (IS)	Claims	1, 3-5, 7-10, 12-15	YES
	Claims		NO
Industrial applicability (IA)	Claims	1, 3-5, 7-10, 12-15	YES
	Claims		NO

2. Citations and explanations

This report makes reference to the following documents:

D1: US-A1-2002003649

D2: 1996 International Semiconductor Conference. Sinaia, Romania, 9-12 October 1996, International Semiconductor Conference, New York, IEEE, US (09-10-1996), 2 CONF. 19, pages 31-40

D3: JP(A) 10038683

D4: JP(A) 10164624

1. Document D1 is considered the prior art closest to the subject matter of claim 1. It discloses (the references in parentheses are to figure 2 of D1):

Optical receiver (figure 2) for an optoelectronic circuit (OEIC) essentially consisting of at least one photoreceiver (D1 ... Dn) and at least one trans-impedance amplifier (AMP1 ... AMPn),

- (i) the photo receiver being divided into a plurality of sub-photodiodes (D1 ... Dn) or consisting of a plurality of individual photodiodes;

(ii) each sub-photodiode (D1) leading to its own trans-impedance amplifier (AMP1) and being electrically condensed in a summing amplifier (AMPs).

from which the subject matter of the claim differs in that

- the optical receiver is a fiber receiver and
- the at least one photoreceiver, the transimpedance amplifier and at least one summing amplifier are monolithically integrated with other circuit components on one chip,
- the diameter of the at least one photoreceiver measuring essentially up to 1 mm.

The problem to be solved by the present invention can thus be seen as that of improving the optical receiver according to D1 in order to reduce costs and enable optical plug connectors to have a greater adjustment tolerance.

The solution proposed in claim 1 of the present application can be considered inventive (PCT Article 33(3)) for the following reasons:

Although document D2 describes the same advantages as the present application with respect to feature a) fiber receiver (see page 35, section V), part a), 1st paragraph) and feature b) monolithic integration (see page 31, section I)), a person skilled in the art would consider the incorporation of these features into the photoreceiver described in D1 to be a conventional measure for solving this part of the problem of interest (see D1, page 1, paragraph 0014).

The subject matter of the claim relates to the selection of a diameter. The second part of the problem is solved by a selection such as this, which is not explicitly disclosed by any of the cited documents nor can it be considered obvious.

2. The same justification applies to independent claim 10. The subject matter of this claim thus involves an inventive step (PCT Article 33(3)).
3. Claims 3-5, 7-9 and 12-15 are dependent upon claims 1 and 10 and thus also satisfy the PCT requirements with respect to novelty and inventive step.

Certain defects in the international application

Contrary to the requirements of PCT Rule 5.1(a)(ii), the description does not cite documents D1 and D2 or indicate the relevant prior art disclosed therein.